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A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 G02B26/00 G02B7/188 G02B26/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 99 52006 A (ETALON INC ;MILES MARK W (US)) 14 October 1999 (1999-10-14)</p> <p>page 9, line 27 – line 35 page 10 page 11, line 1 – line 11 figures 1A-1D</p>	1,2,6,7, 10,11, 15,16
X	<p>ARATANI K ET AL: "SURFACE MICROMACHINED TUNEABLE INTERFEROMETER ARRAY" SENSORS AND ACTUATORS A, ELSEVIER SEQUOIA S.A., LAUSANNE, CH, vol. A43, no. 1/3, 1 May 1994 (1994-05-01), pages 17-23, XP000454081 ISSN: 0924-4247 figures 8,11,12</p> <p>---</p> <p>-/-</p>	1-5,7, 10-16

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ARATANI K ET AL: "PROCESS AND DESIGN CONSIDERATIONS FOR SURFACE MICROMACHINED BEAMS FOR A TUNEABLE INTERFEROMETER ARRAY IN SILICON" PROCEEDINGS OF THE WORKSHOP ON MICRO ELECTRO MECHANICAL SYSTEMS (MEMS) FORT LAUDERDALE, FEB. 7 - 10, 1993, NEW YORK, IEEE, US, vol. WORKSHOP 6, 7 February 1993 (1993-02-07), pages 230-235, XP000366885 ISBN: 0-7803-0957-X figures 3,4 ----	1-5,7, 10-16
X	ZAVRACKY P M ET AL: "MINIATURE FABRY PEROT SPECTROMETERS USING MICROMACHINING TECHNOLOGY" WESCON CONFERENCE, IEEE CENTER, HOES LANE, US, 7 November 1995 (1995-11-07), pages 325-332, XP000586590 ISSN: 1044-6036 figures 2,3 ----	1-5,7, 10-16
X	WATERS R ET AL: "MICROMECHANICAL OPTOELECTRONIC SWITCH AND AMPLIFIER (MIMOSA)" IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS, IEEE SERVICE CENTER, US, vol. 5, no. 1, January 1999 (1999-01), pages 33-35, XP000823385 ISSN: 1077-260X figure 1 ----	1-5,7, 10-16
A	US 5 920 391 A (SUSKI JAN ET AL) 6 July 1999 (1999-07-06) column 6, line 58 - line 67 column 7, line 1 - line 63 ----	1,8,9
A	EP 0 419 853 A (TEXAS INSTRUMENTS INC) 3 April 1991 (1991-04-03) figures 1A,1C,6 ----	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int.	dional Application No
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Patent document cited in search report	Publication date	Patent family member(s)		Publication date
WO 9952006	A 14-10-1999	WO	9952006 A2	14-10-1999
US 5920391	A 06-07-1999	FR AU EP WO	2740550 A1 7308596 A 0876594 A1 9715818 A1	30-04-1997 15-05-1997 11-11-1998 01-05-1997
EP 0419853	A 03-04-1991	US EP JP KR	4954789 A 0419853 A2 3209208 A 179363 B1	04-09-1990 03-04-1991 12-09-1991 01-05-1999